



CLIMATE CHANGE IMPACT ASSESSMENT

Date	August 2019	Project Name	MALTON, NORTON AND OLD MALTON FLOOD ALLEVIATION SCHEME
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Ref	Project scheme benefits	Scheme element	Work Location	Climate Change Impact of Carrying out the Works	Climate Change Impact of Not Carrying out the works
001	Property Level Protection	Protect 43 properties from surface water flooding which are at a >than 1 in 10 chance of flooding each year	Malton, Norton and Old Malton	One off construction, delivery and installation of required products to implement specific property level resilience works to reduce flood risk and reduce the subsequent energy consumption levels associated with recovery from flooding	Recurring flood risk affecting a significant number of properties where residents will continue to need to respond to the impacts of their properties being flooded involving relocating, using dehumidifiers and repairing damage to properties and as a consequence resulting in an increased level of energy consumption.
002	Improve local flood warning procedures and telemetry	CCTV operation	Malton and Old Malton	<p>Ongoing Electric consumption 24/7 operation</p> <p>An improvement to the current flood management arrangements by installing CCTV to provide early warning of flooding in Malton and Old Malton reducing the number of miles travelled between each location to regularly monitor water levels</p> <p>The ability to deploy pumps into position quickly reduces the number of pumps actually required to manage the water levels, reduces diesel consumption and avoids the need to implement road closures and traffic diversions.</p>	<p>Frequent physical monitoring of water levels at each location by each agency throughout the day and night during flooding events, using vehicles and fuel.</p> <p>The numbers pumps being deployed will continue to be as now, at the height of the pumping during the floods in 2015/16 in excess of 25 pumps were operating.</p> <p>The risk of needing to close roads will remain especially County Bridge which requires traffic diversions between Norton and Malton. As an example, running one pump for 24 hours uses 40 litres of diesel which produces 106kgs of carbon. By comparison, one diesel powered car travelling an additional 6 miles following a diversion produces 2kgs of carbon. The pump output is therefore equivalent to 50 cars following a 6 miles diversion. Based on a 12 hour traffic survey in January 2018 covering movements across the level crossing where 14,500 vehicle movements were recorded this equates to 29,000kgs of carbon if all these vehicles were diverted due to County Bridge being closed.</p>



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003	Construct permanent chambers for temporary pumps	Construction phase	Malton, Norton and Old Malton	One off improvement works to install purpose-built infrastructure to speed up the deployment of pumps and minimise vehicle movements involving construction (brackets, pipework, concrete)	No change to current deployment of pumps which requires frequent vehicle movements journeys to and from each location to set up the pumps.
004		Operations of pumps during flooding	Malton, Norton and Old Malton	Reduced numbers of pumps required during flooding events which will reduce the fuel use during periods of pumping. <i>Note: The future pump replacements will ensure the most fuel efficient pumps are added to the pump inventory.</i>	The number of mobile pumps will continue to be as now to manage flooding events in accordance with the M, N and OM Pumping Plan.
006	Capital improvements to Riggs Road drain, Old Malton	Surveying underground culvert from Riggs Road drain	Old Malton	One off exercise involving contractor vehicle movements to survey the drainage system and identify any improvements that may be possible within the culvert to reduce the flood risk associated with surface water flooding and increase the effectiveness of the emergency response.	Properties will continue to be affected as now by flooding from ground surface water. Unable to determine any improvements that may be possible within the culvert to reduce the flood risk associated with surface water flooding and therefore unable to increase the effectiveness of the emergency response.
007		Jetting and silt removal or culvert	Old Malton	One off exercise to reduce any build-up of silt that may be contributing towards surface water flooding to reduce future flood risk involving jetting and removal of silt from culvert by transporter vehicle	Properties will continue to be affected as now by flooding from ground surface water. Unable to reduce any build-up of silt that may be contributing towards surface water flooding to reduce future flood risk.
008		Capital improvements to Riggs Road drain culvert	Old Malton	Identification of any capital improvement works reliant on the completion of the survey in 006	Properties will continue be affected as now by flooding from ground surface water. Unable to determine any improvements if the survey is not completed.
009	Control of surface water	Flow paths	Castlegate/ Sheepfoot Hill, Malton	One off improvement works to create flow paths to reduce the flood risk to properties affected by ground surface water involving construction.	Properties will continue to be affected as now by flooding from ground surface water.



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010	Rain garden – Sustainable drainage system project	Site preparation	Castlegate, Malton	One off improvement works to create a sustainable environment to slow the flow of water and reduce flood risk involving traffic movements, works machinery	Properties will continue to be affected as now by flooding from ground surface water.
011		Site construction	Castlegate, Malton	The creation of a rain garden will involve planting trees to improve diversity and the visual aspects of Castlegate. It is estimated that one tree planted will store 720kgs of carbon over its lifetime (based on 40 years) technically referred to as sequestration. The number of trees to be planted is currently not known.	Properties will continue to be affected as now by flooding from ground surface water.

COMMUNITY IMPACT ASSESSMENT

The Malton, Norton & Old Malton Flood Alleviation Scheme is a project partnership between North Yorkshire County Council, Ryedale District Council, Environment Agency, York/North Yorkshire/East Riding Enterprise Partnership, Malton/Norton Town Councils and Yorkshire Water.

The Scheme delivers social value through tangible improvements which provides assurance to the community affected that there is a multi-agency flood risk management commitment to delivering improved resilience measures to efficiently and effectively deal with secondary ground water flooding when periods of heavy rainfall affect the area.

A number of deliverable solutions and tangible benefits would be implemented through the Scheme to improve the speed of the multi-agency flood management response in Malton, Norton and Old Malton and to reduce the flood risk affecting 126 residential and 23 commercial properties who are currently affected by a 1 in 10 chance of flooding in any given year. These improvements include permanent infrastructure to speed up the deployment of temporary pumps, channel surface water, improve existing draining and property level resilience measures to reduce the flood risk affecting individual properties. Complementary sustainable draining measures, including the provision of a rain garden, to reduce the volume of surface water entering the combined sewer which will minimise the need for road closures, reduce miles travelled following diversions, stimulate investment in the area, build confidence and improve the economic status of the towns.